

# Up To Date

## NASA IV&V Facility Educator Resource Center Newsletter

September 2010

### New Equipment at the ERC

**NEW!** The NASA IV&V ERC is adding a **third** LEGO Robotics kit to our Equipment Loan Program. This means more opportunities for the ERC to provide free workshops at your location and better access to using the kits. The Robots and Ratios training is six hours in length and can be held in almost any setting because the kit includes literally everything needed to implement the program including the robots, laptops, programming software, video-training software, curriculum, many extra sensors and parts, whiteboards, and more!

**NEW!** In support of the Real World Design Challenge, Robotics, Rocketry

and our trainings on Pro/Engineer CAD software, the ERC is adding a uPrint 3-D printer to our state-of-the-art STEM training lab. This exciting technology will allow WV educators and students to produce a plastic prototype of any three dimensional object they create in a CAD program including an airplane wing, a robotic arm, or a rocket



nose-cone or fin. This tool is so new workshops haven't been scheduled yet, but will be soon so stay tuned.

**NEW!** Brush Bots that paint, crabs that walk using solar power, bugs that respond to sound and touch, robotic arms, robotic hands, and

end effectors are all part of a Robotics Exploration Kit that has been added to the ERC equipment available for loan to WV educators. Targeted for the elementary and middle school aged youth, this kit is a fun way to explore what robots can do and how NASA uses robots in space.



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**NEW!** A second Sunspotter solar telescope was acquired by the ERC. This will enable educators to check



out both scopes at once for viewing sunspots and sun activity safely.

### Competitions for Students

**First Lego League** Registration ends soon! If you are planning on sponsoring an after-school FLL team, register soon at: <https://gofll.usfirst.org/> The NASA IV&V ERC is happy to provide your leaders and volunteers with free training on building, programming, and even tips for competing in the

WV FLL Challenge.

**The Real World Design Challenge** is now accepting team registrations for 3-7 high school students to design an airplane wing using free 3-D CAD software and to present their design at the Governor's Cup competition to be held at Marshall this January! The winning team and

their coach receive an all-expenses paid trip to Washington D.C. in April to compete with teams from across the nation. Register at: [www.realworlddesignchallenge.org/](http://www.realworlddesignchallenge.org/) Free trainings are being scheduled now in Huntington, Fairmont, and the Wheeling area and more information will be released soon as training sites are selected. The NASA IV&V ERC is the

state coordinator for the RWDC, the MAAC (<http://maacinc.com>) is coordinating team mentors, NETL ([www.netl.doe.gov](http://www.netl.doe.gov)) is organizing the judges, and the June Harless Center for Rural Educational Research and Development ([www.marshall.edu/harless](http://www.marshall.edu/harless)) is hosting this year's Governor's Cup competition at Marshall University.



## Upcoming ERC Workshops

- September 14 (Webinar)** Robots Near and Far.....5-6:30 pm
- September 21** Physics of Flight .....5-7 pm
- September 29** Starlab / SpacePlace.....5-8 pm
- October 5** Fascinating Flight.....5-7 pm
- October 14** Viewing the Universe with Telescopes.....6-9 pm
- October 16 (Webinar)** Black Holes 101 .....10:30 am-12 pm
- October 21-23** WV Science Teachers Association Conf. .... Olgebay Park Wheeling, WV
- ERC Workshops presented at WVSTA will be:
- Robotic Explorations
  - Intro to GLOBE and GPS

## NASA, Dinosaurs, and Bats at WVU's Pre-K Laboratory School

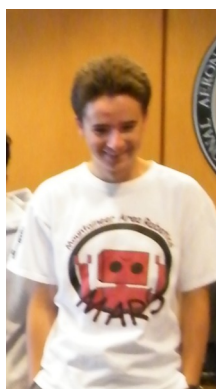
The preschool students from West Virginia University Child Development Laboratory Nursery School have been studying dinosaurs and paleontology. Early Childhood Educators Diana Kingsbury and Melissa Workman have implemented the program by creating a learning center with a dinosaur dig, paleontology kits, dinosaur models and a dinosaur museum with items on loan from the ERC. Besides the "NASA, Remote Sensing, and Carnegie Dinosaur Kit," they will also be using the "Echo the Bat" kit to explore the use of sonar. The three, four and five year old chil-



A budding paleontologist examines a dinosaur thumb spur.

dren have been classifying the dinosaurs by many characteristics, assembling bones from their explorations to create dinosaurs, and learning how dinosaurs were named. There are several students in the class who have learned all of the names of the dinosaurs. They are creating 3-D art pieces of dinosaurs according to their interpretations of the bones they find on their "dig." The two classes have been reading books from the extensive library as well. The students have also been investigating

## Ohi Accepted into INSPIRE



Congratulations to Nick Ohi, a WV high school student, on being accepted into the NASA INSPIRE 2010-2011 Online Learning Community (OLC)!

The INSPIRE Online Learning Community (OLC) provides resources, activities and educational modules, as well as the mechanism for the students and parents to interact, ask questions and share knowledge, thus building a community

of practice. Students who benefit the most from being a member of the INSPIRE OLC log on at least once a week to participate in a live event, do an activity or browse the resources.

Participation in community service and educational activities offered by other organizations will be encouraged to further enhance the student's knowledge and experience.

More about the program and applications can be found [www.nasa.gov/offices/education/programs/descriptions/INSPIRE\\_Project.html](http://www.nasa.gov/offices/education/programs/descriptions/INSPIRE_Project.html)



Students at the WVU Nursery School dig for dinosaur bones to examine.

coprolite, learning what fossils are and how they are created. One three year old went home and explained to his father that he was a paleontologist at school, and that he could not wait to go again tomorrow so he could learn more about hypsilophodon.

Article submitted by Diana Kingsbury

## NASA Apps

Apps are available free of charge at the App Store from Apple or directly on iPhone, iPod Touch and iPad or within iTunes.

The [NASA App](#) for iPhone and iPod Touch collects, customizes and delivers an extensive selection of dynamically updated information, images and videos from various online NASA sources in a convenient mobile package.

The NASA App for iPad offers even more features.

## NASA Update: Space Place

New additions to the award winning Space Place website designed for the young and young at heart include:

**Ozone Zap Trap:** Learn about good and bad ozone as you trap the good ozone and zap the bad!

**Photon Pile-up:** Collect enough

## Goddard Regional ERC Meeting

The Goddard Regional Educator Resource Center bi-annual meeting was held on August 27-28 at the GSFC visitor center in Greenbelt, MD. The NASA IV&V ERC participated in this event to increase the collaborations between IV&V and our primary center. As a direct result of the meeting, Goddard will loan their Dynamic Planet 3-D display to the IV&V ERC in support of Earth Science Week and the WV Science Teachers Association



Conference and our ERC will travel to Pittsburgh to co-teach a rocketry workshop this October 16th.



Above: NASA's Dynamic Planet

Left: Todd Ensign with Goddard ERC region representatives at the GSFC Visitors Center.

photons to reveal an ultraviolet universe.

**New Wave Sound:** Listen to black holes and other cosmic weirdness!

**Wall Calendar:** Get the latest NASA wall calendar for your home or office.

**Space Place Live:** Investigate ca-

reers and learn about the lives of NASA scientists and engineers.

The NASA Space Place website was chosen as one of the top ten websites for kids. Check it out at: [Spaceplace.nasa.gov/en/kids](http://Spaceplace.nasa.gov/en/kids)

## ERC "Building Capacity" First Lego League Workshop

A group of informal educators from the 4-H program and community groups committed to forming a FLL Robotic Team for the coming year attended a workshop at the ERC Saturday, Sept. 11, to learn robot design and programming, the FLL challenge and more. Youth mentors from the MARS robotic team and the WV



coordinator, Meri Cummings from the Center for Educational Technology in Wheeling presented the rules and regulations, tips and tricks, and clarified that the primary goal is for youth to have FUN!

Left: Robots are programmed to solve a challenge.

Center: Participants gather for a group photo



An additional robotic workshop is scheduled for Nov. 6 To sign up visit the ERC website <http://erc.ivv.nasa.gov> A robotic workshop can be scheduled for your location by calling 304-367-8438.

Below: The MARS team demonstrate their expertise.



## The ERC Staff

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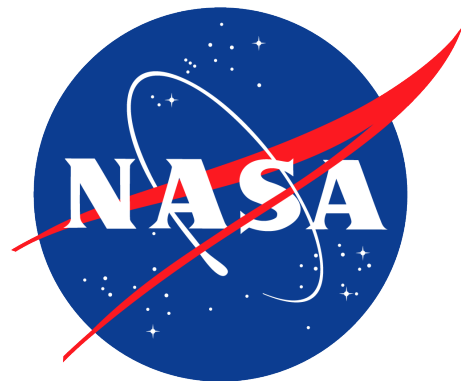
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**We're on the web!**

<http://erc.ivv.nasa.gov>



*The NASA Independent Verification and Validation Facility Educator Resource Center's goal is to serve teachers, informal educators, and pre-service teachers to enable them to reach their goals. Through a grant with Fairmont State University, the NASA IV&V Facility ERC provides materials, equipment for loan, and professional development workshops both at the facility and around the state of West Virginia (scheduled upon request) for educators that reflect NASA's current research and technology.*



## Where in WV is the ERC?

September Workshops in Red

September Equipment Loans in Blue

### To schedule a workshop:

Contact the ERC by calling 304-367-8436 or emailing:

[pamela.casto@ivv.nasa.gov](mailto:pamela.casto@ivv.nasa.gov)

### To schedule equipment for loan:

First check the equipment loan calendar on the ERC website to see if the equipment is available for the dates desired. Then email Amy Phillips who will schedule the dates.

[amy.phillips@ivv.nasa.gov](mailto:amy.phillips@ivv.nasa.gov)

Calling Amy Friend at 304-367-8251 is also an option for scheduling.

